

# EFFECTS OF A SOCIAL INTEGRATION MODEL IN INCREASING RETENTION IN DRUG TREATMENT AND REDUCING DRUG USE IN PUERTO RICO

Reyes JC, Robles RR, Colón HM, García MM.

Research Institute, Mental Health & Anti Addiction Services Adm. / Center for Addiction Studies, Univ. Central del Caribe

## Introduction

Retention in drug treatment is one of the factors found to be most influential in the process of recovery (1). The longer the individual is exposed to treatment the higher the probability that he/she will recover from drug addiction. However, one of the problems that plague our systems of care is the high rate of patients who abandon drug treatment shortly after admission. For example, a study of drug injectors in Puerto Rico found that the mean length of stay in drug treatment of this group was about 3 weeks, and that drug injectors had had on average 4 previous admissions to drug treatment (2). Under these circumstances, the effectiveness of the existing drug treatment system to maintain their clientele in the programs, prevent relapse, and reduce drug abuse is severely limited.

To shed light on the factors that influence retention in drug treatment and consequently reduce drug abuse, we undertook this study. The study is part of a current research program that assesses a social integration model designed to reduce relapse among drug abusers entering drug detoxification in San Juan, Puerto Rico. This social integration model assumes that drug treatment after detoxification is the necessary first step for addicts to enter a process of recovery. The recovery process is further assumed to be facilitated by an after-care program that promotes social integration into different significant structures of the community, such as family, church and work (3).

In this study we assumed that length of stay in treatment was the mediating mechanism linking the social integration intervention to the expected outcome, reduced drug use. Thus, we attempted to answer the following questions:

- How does our preventive program influence retention in drug treatment and consequently reduce drug use?
- Does length of stay in treatment after detoxification significantly differ between participants assigned to the experimental social integration intervention and participants assigned to a control group?
- Is length of stay among participants of the intervention associated to reduced drug use?

## Methods and Procedures

Subjects were selected at random from March, 1992 to April, 1993 from the three state-operated detoxification clinics in the San Juan Metropolitan Area. Participants were then randomly assigned to either the control condition or to the social integration intervention.

The control condition consisted of the participant following the regular course of treatment offered by the State Treatment System. The State Treatment System for the San Juan Metro Area comprises one central intake unit, three detoxification clinics, two inpatient units, and one methadone maintenance program. The inpatient treatment is programmed to last from eight to 12 months; the maintenance program has no pre-established duration or limit. The participants in the social integration intervention were, in addition, assigned a "Community Integrator". An action plan was developed between the Integrator and the participant to maximize the appropriate utilization of the available supportive relationships and identify additional ones. Continuation in treatment after detoxification and retention in treatment were two major objectives of the Integrator during the first phase of the program. The Integrator contacted the participant's significant relationships such as parents, spouses and close friends, and attempted to meet with them. In these meetings, drug abuse, recovery, relapse and the need for support during recovery were discussed. The Integrator's functions also included contacting the primary counselor in the treatment program if the participant continued treatment after detoxification.

Length of time in treatment after detoxification, the intervention mediator, was measured at follow-up from responses to questions about the treatment programs in which the participant had been admitted since the first project interview. Drug use, the response variable of interest, was also assessed at follow-up. Individuals were asked to name the drugs they had consumed in the previous 48 hours. After the interview, subjects were asked to provide a urine specimen for toxicological tests. Participants interviewed in correctional institutions or in drug treatment programs (n = 93) were not asked for urine specimens as officials from these organizations did not agree to specimen collection. The results of the toxicological tests were used to confirm self-reported drug use. Among those tested, the correspondence between their self-reports and the toxicological tests resulted in a kappa value of .72. Since toxicological test information was not complete for all subjects assessed at follow-up, self reported data was used.

## Results

Table 1 shows the demographic and drug use profiles of the total sample and of the group successfully re-assessed at follow-up. One third of the 414 subjects recruited were female. Most were young adults between 25 and 34 years old (53.6%), with a low level of educational attainment (72.4% without a high school diploma), and only 28.6% were employed previous to treatment admission.

For the most part, participants used heroin and cocaine. A mixture of both drugs (speedball) through drug injection was reported by half of the sample (51.7%). The remaining half of the study participants were distributed in similar proportions between those reporting crack smoking and those snorting cocaine and heroin (22.4% and 25.9%, respectively).

In order to assess the results of the random assignment scheme and detect biases arising from follow-up re-assessments, tests of independence were conducted with the complete sample and after excluding subjects lost to follow-up. The results indicate that the two groups were equivalent in characteristics and that loss to follow-up did not result in noticeable differences in the samples.

TABLE 2. INTERVENTION CONTACTS WITH THE SOCIAL INTEGRATION GROUP

	Mean	SD
All Types of Interventions	15.1	12.7
Drug Treatment as a Significant Topic of the Intervention	7.9	7.1
Face to Face Contacts with Participants	9.4	9.1
Contact with Family Members	3.5	5.1
Contacts with Treatment Staff *	1.4	2.2

\* Excludes subjects not continuing treatment after detoxification

Table 2 summarizes the level of exposure to the intervention that the integration group received. Integrators intervened an average number of 15 times (SD = 12.7) with each participant, either directly with the participant or indirectly through the participants' relatives, the staff of the treatment clinics, or other significant others. Drug treatment was a significant topic of discussion in close to half the encounters (Mean = 7.9, SD = 7.1).

TABLE 1. SOCIODEMOGRAPHIC AND DRUG USE CHARACTERISTICS OF THE BASELINE AND FOLLOW-UP SAMPLES

Characteristics	Baseline N = 414		Follow-Up N = 346		P
	Total Sample %	Control Group %	Social Integration Group %		
Female	34.3	32.9	37.0		.430
Age					
younger than 25 years	15.3	16.2	14.4		
25 to 34 years	53.6	50.9	56.3		
35 years or older	31.1	32.9	29.3		.595
High School or Less	72.4	75.2	70.0		.399
Employed	28.6	28.9	29.1		.973
Detoxification Clinic of Recruitment					
clinic 1	47.3	48.0	46.6		
clinic 2	17.9	19.7	16.1		
clinic 3	34.9	32.4	37.4		.529
Drug Use Patterns					
heroin/cocaine snorters	22.4	22.8	24.4		
crack smokers	25.9	25.7	27.3		.838
speedball injectors	51.7	51.5	48.3		
Admission Under Legal Pressure	15.2	15.0	15.6		.881
Re-Assessed at Follow-Up		84.0	82.4		.663

In order to assess the effects of the social integration intervention on subsequent drug use, a logistic regression analysis was performed. Table 4 shows the coefficients of the logistic regression model. An interaction term of intervention model and length of stay was entered to model the effects on drug use of the intervention through integration into drug treatment, as specified in the intervention model. The interaction term had a significant effect in reducing the use of drugs at follow-up (OR = 0.94, p = 0.005).

This result shows that the participants of the social integration intervention that increased their stay in treatment were more likely to stop drug use at follow-up. No other main effect reached statistical significance although the main effect of length of stay was borderline significant (p = 0.059).

The effects of the intervention over length of stay in treatment were assessed (Table 3). Participants in the social integration model remained in treatment somewhat longer than participants assigned to the control group (2.58 vs. 2.34, respectively), but the difference was not statistically significant. The participants of the integration model recruited in Clinic 2 did show a statistically significant difference. The latter group remained in treatment two and a half months longer than the participants assigned to the control group (1.00 vs. 3.57, respectively).

TABLE 4. RESULTS OF LOGISTIC REGRESSION ON DRUG USE AT FOLLOW-UP

Variables	Beta (SE)	OR	P
Main Effects			
Intervention Model	0.226 (.281)	1.25	.423
Length of Stay in Drug Treatment	-0.022 (.012)	0.98	.059
Clinic 1	0.548 (.323)	1.73	.089
Clinic 3	0.221 (.339)	1.25	.515
Interaction Term			
Intervention by Length of Stay	-0.057 (.020)	0.94	.005

TABLE 3. LENGTH OF STAY IN TREATMENT (IN MONTHS) AFTER DETOXIFICATION BY RECRUITMENT CLINIC AND INTERVENTION MODEL

Recruitment Clinic	Control Group			Social Integration Group		
	n	Mean	SE	n	Mean	SE
Clinic 1	83	2.50	.372	81	2.68	.349
Clinic 2	34	1.00	.260	28	3.57	.648
Clinic 3	56	2.95	.537	65	2.04	.362
Overall	173	2.34	.259	174	2.58	.238

Results of ANOVA analysis:  $f = 2.68, P = 0.022$

## Discussion

The results of this study suggest that drug use is likely to be reduced when drug treatment is strengthened by the strategies of a program integrating clients closer to the activities available in the treatment programs. That is, the Integrator, acting as a broker, might have helped the client use the available resources and might have provided the support needed to more effectively negotiate the structures of a complex system of care.

There is also the possibility that the intervention strengthened the treatment system by providing services needed by significant others in the community. The stresses of unresolved problems of significant others (especially spouses and family members) are likely to act as push forces for clients to abandon drug treatment programs. Conceptualizing client behavior as behavior affected by the problems of their networks of significant other may also help understand and support addicts in their recovery process and help treatment programs be more effective.

## References

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